



## Catching Mercury's gamma rays

By Anne M. Stark  
NEWSLINE STAFF WRITER

A team of scientists and engineers from the Laboratory, in collaboration with UC Berkeley's Space Science Laboratory and Johns Hopkins Applied Physics Laboratory, have designed and built a high resolution gamma-ray detector that will enable NASA's Mercury Messenger to measure the elemental composition of the planet's crust.

NASA's first trip to Mercury in 30 years — and the closest look ever at the innermost planet — is set for Aug. 2, with a predawn launch of the MESSENGER spacecraft from Cape Canaveral Air Force Station, Fla.

MESSENGER will conduct an in-depth study of Mercury, the least explored of the

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THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY

A rendering depicting the Messenger near planet Mercury.

## UC Regents demand security answers from LANL after recent missing disks

By David Schwoegler  
NEWSLINE STAFF WRITER

SAN FRANCISCO — Because of recent security issues at Los Alamos National Laboratory, LANL Director George P. Nanos, University of California Vice President for Laboratory Management Robert Foley and UC Regents' Chair Gerald L. Parsky held a special meeting with the news media on Thursday afternoon. The discussion was included as part of the regularly scheduled UC Regents meeting at the UCSF Laurel Heights campus.

LANL officials have been unable to locate two Classified Removable Electronic Media, referred to as CREM, or computer storage device-like disks, drives or tapes containing classified information. The devices have been missing from the Weapons Physics Directorate since July 6, despite a monumental search effort at LANL.

During the Regents' Committee on Oversight of the Department of Energy Laboratories, Regents questioned Foley and Nanos on the particulars of the CREM incident, the underlying causes, and what was being done to prevent recurrence.

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## IPAC Website eases software licensing process

LLNL software developers take note: the Lab has a Website where, with just a credit card, users can license Lab software.

Bucking the traditional snail's-pace licensing processes of many research organizations, the Lab's Industrial Partnerships and Commercialization (IPAC) office has developed a Website ([www.llnl.gov/software](http://www.llnl.gov/software)) that lets users click on the software they want to license, download the license agreement, punch in a credit card number and

receive their license in a week or so.

That's lightning fast in the world of intellectual property. IPAC hopes this will grow into a quicker vehicle for individual and company use. The licenses are end-user licenses; site licenses can also be negotiated.

Most of the software available is used in a variety of technical research areas. NEC (Numeri-

IPAC, page 5

## Congressional water bill taps LLNL as regional center to help improve quality

Rep. Richard Pombo (Tracy) and Sen. Pete Domenici (New Mexico) led a bipartisan group of senators and House members Wednesday in introducing legislation to create a federal water technology program aimed at expanding and coordinating water technology research around

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## Veterans discuss tales of hardships and danger on the Iraqi war front

By Bob Hirschfeld  
NEWSLINE STAFF WRITER

Life for U.S. service personnel in Iraq is an adventure filled with hardships and constant danger.

That assessment came from two Lab employees, activated for military duty in the past year, during a talk Wednesday, sponsored by the Lawrence Livermore Laboratory Armed Forces Veterans Association (LLAFVA) as part of Veterans Observance Month.

VETERANS, page 3

## Juggling 50 years of LLESA

LLESA celebrated 50 years of employee services Thursday in the picnic area near Bldg. 317.

From left: NAI employees Jonathan Camp, Chris Brand, David Youd and Peter Balland juggle at the event. See page 5 for more photos.



BOB HIRSCHFELD/NEWSLINE



Stepping out for awareness — Page 3



Honoring the exemplar — Page 8



Behind every e-mail — Page 8



## LAB COMMUNITY NEWS

### Weekly Calendar

Technical Meeting Calendar, page 4

Friday  
**16**

The American Indian Activity Group's (AIAG) "**Holidays in July**" toy drive for the many (500-plus) foster children at the American Indian Child Resource Center and the Indigenous Nations Child & Family Agency, both located in Oakland, continues today through July 30. For the past five years, AIAG has collected toys and funds for the holiday season. Drop off points are as follows: Darlene Yazzie, Bldg. 132S, Irene Massiatt, Bldg. 132N, Michele Cardenas, Bldg. 571, Sandy Basso, Trailer 6526, and Jim Johnson, Site 300. For more information, call Yazzie, 3-7846.

Saturday  
**17**

The Cedar Mountain Winery **concert under the stars** tonight features the Blue Truth Blues Band. Tickets are on sale in the tasting room. Advance tickets are \$20 and \$25 on the day of show. CMW wine club members price is \$15. The concert runs from 7-9 p.m. No pets. CMW is at 7000 Tesla Road in Livermore.

Thursday  
**22**

The July **downtown Pleasanton wine stroll** takes place tonight from 6-9. This is an opportunity to visit downtown shops and businesses, sample Livermore Valley wines or non-alcoholic beverages and enjoy hors d'oeuvres. Tickets for the event are \$20 per person and will be available for purchase from 5:45- 8:30 p.m. or until they sell out only on the day of the wine stroll at two locations: in front of the museum on Main Street, 603 Main Street near the Pleasanton Arch and at a location at the south end of Main Street. The event is limited to the first 700 participants. White balloons will be at the seven participants offering hors d'oeuvres and/or non-alcoholic beverages, and purple balloons will be at the 20 locations serving wine.

Saturday  
**24**

HERS Breast Cancer Foundation presents "**Magic Happens,**" a Las Vegas-style magic show with illusionist Ryan M. Adler at 6:15 p.m. today at the California School for the Deaf, 39350 Galaudet Drive, Fremont. The cost is \$30 for adults or two for \$50; \$15 for youth or two for \$20. The ticket price includes the show, refreshments and a silent auction. As a 501C(3) non-profit organization, 70 percent of each ticket is tax-deductible. For tickets, call (510) 505-9255 or e-mail [magic@hersfund.org](mailto:magic@hersfund.org).

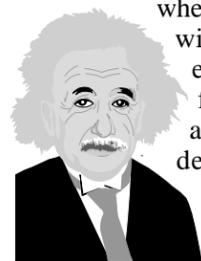
Up  
&  
COMING

**Concert in the vineyard** featuring Heather Combs (blues/country/rock) will take place from 5-8 p.m., Sunday, Aug. 1, at the White Crane Winery/The Vineyard Inn at Crane Ridge, 5405 Greenville Road, Livermore. Price is \$10 per person or \$35 per carload. Purchase tickets at the tasting room or e-mail to [events@whitecranewinery.com](mailto:events@whitecranewinery.com). No outside beverages allowed.

### BRIEFLY

#### Got science?

Looking for a fun, educational activity for family, friends and summer visitors? Bring them to the Lab's Discovery Center on Saturday, July 24, from 10 a.m. to 2 p.m.



when the Public Affairs Office will present "Discover Science Saturday" a fun-filled day of hands-on activities, displays and demos showcasing science and technology for enthusiasts of all ages. For more information, call Linda Lucchetti, 2-5815, or visit the Web at <http://www.llnl.gov/llnl/06news/Community/lecture.html>

#### Wanted: organizational program reviews and annual reports

The Laboratory Archives and Research Center is compiling a historical collection of organizational program reviews and annual reports including Director's Program Reviews, Manpower and Workforce Reviews and Annual Reports.

If you have old program reviews, workforce reviews, annual reports, or internal reviews, send them to the Archives at L-451.

For further information about archives and research issues, call Maxine Trost, Laboratory archivist, at 2-6539.

### IN MEMORIAM

#### Frederick Wooten

Frederick Wooten, long-serving chair of the Department of Applied Science at UC Davis, died June 15. He was 76.

Born in Linwood, Penn., Wooten became the first from his high school to attend the Massachusetts Institute of Technology, where he earned a bachelor's degree in physical chemistry in 1950. Upon receiving his Ph.D. from the University of Delaware, he moved west to the Laboratory in 1957, where his research activities initially focused on photoelectron spectroscopy.

In 1965, he joined the UC Davis Department of Applied Science at its Livermore site as a lecturer. In 1972, he became a full professor and assumed the position of vice chair of the department, moving from Livermore to the Davis campus. His goal was to develop the fledgling department into one that would be recognized for its excellence in research and scholarship.

"He immediately set forth to establish positive relationships with many of the departments in the College of Engineering and the College of Letters and Science," said friend and colleague Yin Yeh, a UC Davis professor of applied science.

Wooten became department chair in 1975, holding the position until 1994.

During his tenure as chair, the department grew in reputation as well as in the number of students and faculty. New faculty members moved

from the Lab's long-standing interests in nuclear fusion, plasma physics and computational physics to broader interests in laser physics, materials science and biophysics.

Wooten's areas of research evolved with each student, moving from photoemission spectroscopy to materials science and finally to computational modeling of complex structures.

He stepped down as chair in 1994 and retired from UC Davis in 1996. After retirement, he remained active in research, especially in the area of numerical simulation of physics problems, making key findings in the structure of glasses. At the time of his death, he was writing a textbook on group theory with Michael El-Batanouny, a former graduate student and now professor of physics at Boston University.

Wooten is survived by his wife, Jane; two sons, Donald and Bartley; five grandchildren; and two sisters, Jane and Carol.

A memorial service is scheduled for 3 p.m., Sept. 17 at the University Club, UC Davis.

The family requests that any donations be directed to a scholarship fund for students in need at the Department of Applied Science. Checks should be made out to the Regents of the University of California with a letter indicating the purpose of the donation.

#### Mary Louise Sylvester

Mary Louise Sylvester, a Fremont resident for 49 years, died, July 7. She was 84.

Born on April 29, 1920, in Norwalk, Ohio, Sylvester worked as a travel clerk at the Laboratory for 25 years.

A voracious reader and a dedicated bridge player, Sylvester was an active member of the Tri-City Woman's Club for more than 20 years.

She is survived by her children, Martha LeRoy of Fremont, Andy Scott of Bend, Ore., and Kathy Long of Mountain View; five grandchildren; and two great grandchildren.

She was preceded in death by her husband, Leo Sylvester; and her sister, Jean Samuel.

A memorial will be at 1 p.m. Saturday, July 24, at Niles Congregational Church, 255 H St., Fremont. The family asks contributions be made to the Betty Jo Romero Fund, c/o Kaiser Hayward, 27400 Hesperian Blvd., Hayward 94545.

### Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

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## AROUND THE LAB



# Employees take strides to promote cancer awareness

By Leslie Schwartz  
NEWSLINE STAFF WRITER

Lively chatter filled the air outside Bldg. 361 Tuesday afternoon as cancer survivors and supporters of the Lab's Cancer Awareness Campaign (CAC) gathered to participate in the fourth annual survivors and memorial walk held at LLNL. Site 300 also held a similar walk in remembrance of cancer victims and to honor the strength and determination of survivors.

Amidst the encouraging words, stories and memories, a common bond was forged among Lab employees who transformed from strangers to friends in a matter of minutes, united by the shared experience of cancer.

American Cancer Society representative John Lazar, joined the activity, thanking participants for sharing in the mission to help fight cancer. "You are the face of the American Cancer Society and I'm here to validate your wonderful work," Lazar announced before the walk began.

"This [walk] is a way to share this experience of cancer together," said Mark Costella, who, along with Cathy Kaplan, is co-chairing CAC. "It is the unifier that unites us as we share in the conquering of cancer and the losses we've experienced."

More than 40 Livermore and Sandia employ-



BOB HIRSCHFELD/NEWSLINE

Above, more than 40 Livermore and Sandia employees participated in the 2004 annual survivors and memorial walk earlier this week as part of the 2004 Cancer Awareness Campaign. Right, Site 300 employees participated in their own walk in remembrance of cancer victims and to honor the strength of survivors.

ees participated in the half-mile loop walk during lunchtime.

Third-year participant Mary Dyer, from Plant Engineering, noted the "positive outlook" that was shared among the crowd and the "energy of everyone who has had cancer or has lost someone to it."

Brian Kost, a first-time participant from NIF, walked for his wife and himself; both have experienced cancer, and Kost was encouraged by the "fantastic support" the event provided.

"Every year our group is getting larger,"

noted Margie Altenbach, a four year CAC committee member. Altenbach has served on the committee, planning and organizing events over the past few months because she believes strongly in the cause, and knows that "it [CAC] has a focus. It has a mission. And that's what we're here to fulfill today."

The 2004 Cancer Awareness Campaign continues this month through July 27.

"Stamp Out Breast Cancer," by Ernie Bodai will be held at noon Wednesday, July 21, in the Bldg. 123 auditorium. Bodai, a prostate cancer survivor, is the director of Breast Surgical Services at Kaiser Permanente and founder of the Breast Cancer



Research postage stamp, which so far has raised more than \$35 million for breast cancer research.

"Survivors and Caregivers" at 12:15 p.m. on Tuesday, July 27, will feature a panel of Lab and Sandia survivors and the loved ones who provided care and support who will share the vital role of caregivers.

For further information, contact Mark Costella, 2-8999, or Cathy Kaplan, 3-6555.

## VETERANS

Continued from page 1

Dianne Buckhout of Computation, served as an Air Force medic in a hospital unit set up at the Baghdad airport.

Shane Kim, a Protective Services Officer, spent more than a year north of Baghdad with the National Guard's 223rd Military Intelligence Battalion.

The current insurgency is difficult to combat, Kim said. Much of his time was spent in Samarra, whose population is overwhelmingly Sunni, and antagonistic toward the U.S. occupation.

Mortar attacks occurred daily, with gunmen launching their weapons from the backs of pickup trucks. Although U.S. radar could accurately pinpoint the origin of the attack, the process of aiming cannon fire at the proper coordinates took about six minutes, long enough for the truck to disappear. Furthermore, the attacks often were launched from crowded marketplaces, mosques, schoolyards or cemeteries.

Kim recalled that conditions improved after "Operation Ivy Blizzard," an intense house-by-house anti-insurgent sweep of Samarra last December and January.

"It took six weeks to pacify the city," Kim said. "But at the same time, we kind of antagonized a major-



Air Force medic Dianne Buckhout takes defensive position during an insurgent's attack on the Baghdad airport last December, the night after U.S. forces captured Saddam Hussein. Buckhout spent two months on duty in the hospital facility at the airport.

ity of the people. When you have that kind of operation, it's very emotional. You have innocent people caught in the middle, especially women and children."

Buckhout said: "I was very impressed with the young men and women of all the services, especially those out on the checkpoints and the firing lines

because the checkpoints had some really bad scenarios go down. It's an intense area out there."

It wasn't just the Iraqi insurgents who posed a danger. Kim managed to kill three black scorpions, but was bitten by a sand flea, resulting in a long-lasting and irritating itchy rash, made all the worse by temperatures that reached 130 degrees in July and August.

Both vets agreed that the troops' morale was significantly boosted by packages from home. Although soldiers have access to local shops and PX facilities, they especially appreciate gifts such as music CDs, books, snacks and personal hygiene items including hand sanitizers and wipes, and small mirrors.

Buckhout is ready to return to Iraq if her unit is recalled. She said: "What Saddam did to the general population in terms of fear and terror was significant, and I just don't think that's properly translated here in the United States. I don't think

you hear enough about how bad it was for them, and how much they wanted someone to come in and change this."

She continued: "People ask me, 'Is it worth it? Is it worth the deaths and the injuries?' And I answer, 'Yes.' We believe in what we are doing out there."



## NEWS YOU CAN USE

### REGENTS

Continued from page 1

After nearly an hour of testimony by Foley and Nanos in open session — including questions from the Regents — it was explained that the CREM situation occurred because of a combination of both system problems and people problems, and a cultural change at Los Alamos is definitely necessary.

Foley announced that LANL's newly selected security chief, Jack Killeen, formerly a senior vice president with Wackenhut, will report directly to him as a consultant in rectifying the situation. The access of the individuals directly involved at LANL has been suspended.

Classified work at LANL has been placed on stand-down. Classified activities will resume on a piecemeal basis, as confidence is restored within individual areas. UC President Robert Dynes and Parsky will visit Los Alamos during the next 30 days to communicate to employees how seriously the Regents consider this issue.

In addition, Energy Secretary Spencer Abraham on Thursday directed Deputy Secretary Kyle McSlarrow and National Nuclear Security Administration Administrator Linton Brooks to personally oversee the inquiry into the underlying security failures. As part of this assignment, the two will visit Los Alamos in the immediate future for a first-hand review of the situation.

Dave Leary, the Lab's director of Safeguards and Security, emphasized that even though this

issue focuses on LANL, the Lab is monitoring events, reviewing its own situation very intently, and imposing some changes here at Livermore.

According to Leary, those changes include an ongoing effort to decrease the amount of CREM on site, even though the Lab has less than LANL. He added that all Livermore directorates will begin a regularly scheduled inventory of CREM Aug. 1.

Leary thanked Lab employees for their continued diligence. The Lab has inventoried 100 percent of its CREM since the process began four years ago, he said, adding the Lab will continue to develop strategies to reduce CREM further.

Leary also plans to meet with all Livermore associate directors to discuss their particular CREM concerns and any other relevant security issues.



## Summer Student Calendar



Looking to learn new skills and meet more people? Summer student interns can check out upcoming intern events on the Student Bulletin Board at <http://education.llnl.gov/sbb/> for more information about seminars, panel discussions, tours and to register for events online.

### Events taking place during the week of July 19:

Tuesday  
**20**

#### Speaker and barbecue

Summer student interns are invited to hear Jeff R. Wright from UC Merced speak at noon at the LLESA picnic area, accompanied by a lunch barbecue. This event is a great way to network with other interns. Contact: Joanna Allen, 3-9225.

#### ICST seminar

Kim Yates from the Center for Applied Scientific

Computing (CASC) will present "BlueGene/L: The Next Generation of Scalable Supercomputers" at 1:30 p.m. in Bldg. 219, room 163. Contact: Paula Ashley, 3-3691, or Kim Yates, 4-3642.

Wednesday  
**21**

#### ICMT seminar

Frank Graziani, B Division, will talk on "Radiation Transport in 3D Random Media: Direct Numerical Simulation" at 1:30 p.m. in Bldg. 219, room 163. Contact: Paula Ashley, 3-3691, or Frank Graziani, 2-4803.

#### Seminar

"How to Create Effective Poster Presentations," by Marsha McInnis. 9:30 a.m., Bldg. 219, room 163. Contact: Barry Goldman, 2-5177. This seminar will demonstrate practical steps to creating poster presentations. McInnis covers how

to understand your audience, what you want to present, the use of Adobe products and making file conversions, among many beneficial topics. Deadline for symposium registration is Aug. 2. You may register for the poster symposium by going to the student bulletin Web page: <http://education.llnl.gov/symposium/registration.lasso>.

Friday  
**23**

#### UC Berkeley campus tour

Come on a 90-minute walking tour of the UC Berkeley campus. Transportation provided. Meet in front of Bldg. 361 at 8:45 a.m. to catch the buses to the university. Contact: Vicki Burau, 4-6274.

Please send your summer student calendar items to Leslie Schwartz at [schwartz16@llnl.gov](mailto:schwartz16@llnl.gov)

## Technical Meeting Calendar

Monday  
**19**

#### CHEMICAL BIOLOGY & NUCLEAR SCIENCE DIVISION

"Control of Inorganic Crystallization by Organized Organic Surfaces," by Joanna Aizenberg, Bell Laboratories, Lucent Technologies. 2 p.m., Bldg. 155 auditorium. Contact: David Smith, 3-5793, [smith24@llnl.gov](mailto:smith24@llnl.gov).

Tuesday  
**20**

#### CHEMICAL BIOLOGY & NUCLEAR SCIENCE DIVISION/CHEMISTRY & MATERIALS SCIENCE

"Photochemistry and Electrochemistry of Rotaxanated Conjugated Polymers," by interviewee Phoebe Kwan, Massachusetts Institute of Technology. 2 p.m., Bldg. 151, room 1209 Stevenson Room. Foreign nationals may attend if appropriate security plan is on file, which includes Bldg. 151. Contact: Jeff Tok, 3-1549, or Eryn Davis, 2-0475.

Wednesday  
**21**

#### PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION

"From Positrons to Neutron Beams," by Wolfgang Stoeffl, N Division. 1:30 p.m., Bldg. 211, room 227, badge required. Contact: Theresa Schantz, 3-0240.

#### ENERGY & ENVIRONMENT DIRECTORATE

"Effects of Climate Change on Water Availability in California: Initial Results," by Philip B. Duffy, Atmospheric Science Division. 1:30-3 p.m., Bldg. 543 auditorium. Refreshments will be served. Contact: Camille Vandermeer, 3-2672.

#### INTEGRATED COMPUTING & COMMUNICATIONS DEPARTMENT/MACINTOSH TECHNICAL SEMINAR

This session will feature an overview presentation on Apple's Worldwide Developer Conference 2004 (WWDC 2004) by LLNL computer scientist Larry Peng. WWDC 2004 included both OS X technology and administration tracks, and covered both current (v10.3 Panther) and upcoming (v10.4 Tiger) technologies. In this presentation selected topics will be covered, including upcoming technologies for OS X Tiger. 10:30 a.m., Bldg. 543 auditorium. For further information (this month only), contact Larry Peng, 3-0880, or e-mail [peng2@llnl.gov](mailto:peng2@llnl.gov).

Thursday  
**22**

#### CHEMISTRY & MATERIALS SCIENCE

"The Landscape Of Optical Materials: Glasses, Crystals, Polymers and Nano-Composites," by Subhash H. Risbud, Department of Chemical Engineering and Materials Science, UC Davis.

3 p.m., Bldg. 155 auditorium. Contact: Dave Eaglesham, 2-0486, or Julie Sedillo, 3-3506.

#### INTEGRATED COMPUTING & COMMUNICATIONS DEPARTMENT

"Filemaker 7 Introduction and Q & A," by Phil Smith and Alexei Folger 1-3 p.m., Bldg. 543 auditorium. Refreshments will be served. Contact: Mary Ann Chapeta, 4-4103.

Friday  
**23**

#### CHEMISTRY & MATERIALS SCIENCE/MATERIALS SCIENCE & TECHNOLOGY DIVISION

"Electron Probes of Molecular Dynamics," by Peter M. Weber, Brown University. 3:30 p.m., Bldg. 235, Gold Room. Refreshments will be served at 3:20 p.m. Contact: Wayne King, 3-6547, or Rebecca Browning, 2-5500.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to [tmc-submit@llnl.gov](mailto:tmc-submit@llnl.gov). For information on electronic mail or the news-group [llnl.meeting](mailto:llnl.meeting), contact the registrar at [registrar@llnl.gov](mailto:registrar@llnl.gov).



## LLESA rocks at 50

Hundreds of Lab employees and guests spent Thursday afternoon feasting over barbecue tri-tip sandwiches while watching co-workers, family and friends participate in numerous games and activities. The carnival celebrated LLESA's 50th anniversary of providing employees services to enhance the work-life quality at the Lab. Steve Goodman, LLESA general manager, feels that the event symbolizes how much "the Lab really values its employees" through all of the services LLESA offers. Pictured from clockwise: Rock-climber Darlene Yazzie of Q Division; Go Game players, from left, Doug Miller, A Division (who is relatively new to the game) and Robert Hopper of Classification & Export Control; meat slicer Al Villa, Plant Engineering; and bowler Gregory Repose, of NIF, the secretary of the LLESA League, who has a 187 average.



PHOTOS BY BOB HIRSCHFELD/NEWSLINE



## IPAC

*Continued from page 1*

cal Electromagnetic Code), however, is a popular antenna modeling code for wire and surface antennas and scatterers. Broadcast companies and ham radio operators are frequent licensees.

Two of the LLNL programs are of potential interest to earthquake researchers:

- SAC is a general-purpose interactive program designed for the study of sequential signals, especially time series data. The software provides analysis tools used by research seismologists to study the details of seismic events.

- E3D is a finite-difference seismic wave propagation code being used in treaty verification and oil exploration as well as earthquake research. The program has been used to create 3D simulations of magnitude 7.1 earthquakes along the Hayward Fault, which runs through some of the most densely populated regions of the San Francisco Bay Area (see <http://www.llnl.gov/hmc/Larsen/Hayward/>).

Leah Rogers, a business executive with IPAC, expects SOAR (Stateless, One-pass, Adaptive Refinement) to be the next software to get a lot of attention. "This software is actually used by people developing video games," Rogers said. "Its compression helps to improve the panoramic view in a game setting."

The other programs currently available for licensing on the LLNL Website are:

- EQ3/6, a software package for geochemical modeling of aqueous systems. The software allows the numerical modeling of the evolution of a

water/rock system over time and reaction progress, and is widely used in the academic world.

- NUFT (Non-isothermal, Unsaturated Flow and Transport), a 3D multi-phase non-isothermal flow and transport model for both saturated and unsaturated simulations. NUFT has been extensively applied to groundwater cleanup, deep geologic processes — including high-level nuclear waste repositories — and subsurface sequestration of carbon dioxide.

- The SafePatch Tool, which provides automated analysis, notification, distribution and installation of security patches and related software to network-based computer systems.

- CRYSTOOL 4.1, which controls a liquid-handling robot to generate randomized conditions for macromolecule crystallization screening.

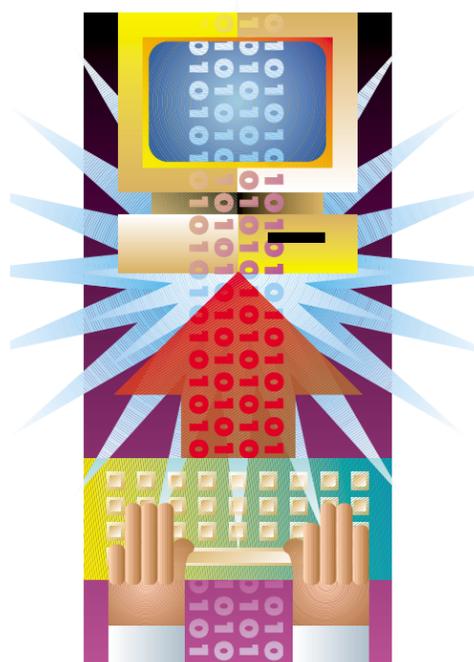
- ZPicture, a DNA sequence alignment visualization tool for dynamically generating conserva-

tion profiles and identifying evolutionary conserved regions in genomic sequences.

The IPAC Website also provides links for several open-source (free) software packages: ConMan, a console management program; PowerMan, a tool for manipulating remote power control (RPC) devices from a central location; Pdsh, a high-performance, parallel remote shell utility; and pam\_rms, a Pluggable Authentication Module for restricting access to computer nodes in a cluster where the Quadrics Resource Management System is in use. "IPAC welcomes other LLNL open-source authors to send us their links," Rogers said. Users can expect new software packages to be added to the site.

The site has been up for about a year and the number of visitors is growing as they learn about the software at conferences and universities.

The best things about the Website, according to Rogers, are that it saves a lot of time for the potential users, it's straightforward, and it offers relatively inexpensive software. Developers interested in proposing software for the site can contact Rogers at 2-3538 or [rogers11@llnl.gov](mailto:rogers11@llnl.gov).





# CLASSIFIED ADS

For viewing ads on or off site. . .  
 Onsite: <https://www.ais.llnl.gov/newsline/ads/>  
 Offsite: <http://www.llnl.gov/llnl/06news/employee.html>

## AUTOMOBILES

2000 - Honda CRV, 59K miles, fully loaded, all power, extended warranty, mint condition, \$12,500/OBO. 209-456-3344

2001 - PATHFINDER, LE, loaded, TV, VCR, 6 CD, GPS, premium sound, moon roof, leather heated seats. Flawless, pd \$47K, asking \$24,995 BO (209-652-8592) cell 209-772-3141

1993 - Acura, Integra RS, White 130k, runs strong & reliable CD, AC, new tires, new brake pads, needs 1 hose replaced. 925-321-1767 after 5pm \$2400 OBO 925-447-7088

1998 - White Saturn SCII, Excellent condition; 86,500 mi; moon roof; spoiler; original owner; \$5150. On lot at LLNL. 209-824-5332

1966 - Ford Mustang rebuilt motor/tran, needs paint, Pony inter. \$4500.00 firm 925-373-1944

1994 - Mitsubishi 3000 Gt, 5 speed, 114k miles, runs great, competition stereo system, sunroof, keyless entry, alarm, pearl white w/ black bra. \$6000 B/O 209-239-7576

1994 - White Suburban, seats 9, 4 wheel drive, one owner, 160K miles, ex. cond., \$6,900 OBO 925-482-4566

1997 - Monte Carlo Z34 Super Clean! Grn/blk leather. All power. K & N, SS exhaust, Eibach susp w/ KYB. Awesome custom sound. Sacrifice \$5575 / call 510-410-0927

2000 - Ford Expedition Sport Utility 4D, Denim blue. 4-wheel drive. ABS. 56K miles. Many other features including rear air. \$18,500. 925-997-9412

2001 - Subaru Impreza 2.5RS sedan, 54k, fully loaded, too many factory extras to list, adult owned, great work/school computer, 13,000 obo. 209-402-7262

## AUTOMOBILE ACCESSORIES

69 Porsche 912 motor complete, partially disassembled, great for project car. 925-447-3965

Camper shell, white, fits 1992 or older 8 ft bed \$350.00 OBO 925-443-1715

Mag Wheels, American Mags, fit Mazda Miata, Red trim, \$150.00 925-455-9954

BMW parting out, 1984 325E Engine and 5spd Trans. 116,000 miles \$800; other misc. parts. Call after 6. 209-943-2166

B&M Hole Shot 2400 Torque Converter. 350-400 Trans. 100 miles of use. \$175.00 209-599-8422

205x75x15 tire, wheel, new \$75 925-735-6002

Roof rack rails for 1992 Plymouth Grand Voyager. \$25. 925-706-2088

13 inch TIRES. 2 Michelin 185/70/13 Radial tires, good condition only \$20 both. Livermore 925-447-7070

## BICYCLES

BMX Free Agent Bike, Hellcat - heavy duty & good condition - \$160. 952-606-6422

Childs bicycle. Trek 220: 20 inch frame, 24 inch wheels. Excellent condition. \$100. 510-339-6375

BMX Powerlite mini, custom-built, Crupi, Answer, Black Widow, excellent condition, extras. \$600. 925-846-5227

Womens Mountain bike. Excellent condition. Barely ridden. 21 speed. Costco bike. \$40 obo 925-240-7374

Ladies bike and mens bike, make offer. See at 1163 Hillcrest Court, Livermore or call 925-447-3967

## BOATS

Waterskis - Pair Superkid 48in skis \$50; flatbottomed training ski \$35; 3 ski vests \$15 each; rope/handle \$15. All for \$125. 925-634-9976

## CAMERAS

Cannon Rebel great condition w/Carring bag. \$125 OBO 925-980-6190

## ELECTRONIC EQUIPMENT

Award winning Canon Epson Printer C84. Brand New. Asking \$55, retail is \$100. 925-784-3731

Pioneer receiver (\$30), Teac cassette (\$15), hi-end Onkyo turnable (\$100), 2 speakers (\$20), VHS tape .50 ea, 8-track tapes .40 ea 415-543-3643

750Mhz Computer Asking \$300 for everything. 925-371-1154

GE 19 inch TV. Model #19PF6736. \$30. 510-226-7440

Gateway 300 computer, 1.4 GHZ, 128 MB SDRAM, 20 GB HD, Windows XP, software, CD ROM/Floppy drives, 15 inch monitor, keyboard, mouse, speakers. \$375. 925-846-3653

GE 27-inch TV, hardly used, \$150 925-337-0080

## GIVEAWAY

Full size bed and box free to good home. Used very little as spare bed only-3years old. 925-371-5269

SS double kitchen sink, 42 inch Broan exhaust hood, almond. 925-462-7276

## HOUSEHOLD

Redwood Play structure, two towers 5x5 connected by a ladder with two swings. Partially disassembled. \$250. 925-294-9022

Maple china cabinet. Very good condition. \$90 obo. 925-846-5110

Queen bed - mattress, box spring, frame, in good condition. \$100. 925-485-1988

Single bed, head-board, foot-board and mattress set. Ideal for young girl, light wood color with heart cut-out. Cost \$269 new, sell for \$100 209-835-7312

Clothing dryer good condition runs very well, asking \$50. 209-832-7879

Q-Size Headboard Wall Unit with lighted mirror, storage & Drawers. Vnity w/8 drawers. Best Offer 925-292-0091

Window air conditioner 10,000 BTU used 1 season, w/mounting bracket \$200 obo, 5 x 3 dining table/4 chairs pine w/walnut stain \$225. 925-634-9976

Table made of rubberwood, clear straight grain. 30W x 30L x 30H \$20 925-455-8609

Living Rm Set- Long Sofa, Loveseat, Comfortable Leather chair w/ottoman, 3 casual tables, lamp \$375 925-447-9969

Queen Bdrm Set, 6 piece, \$650/OBO 925-606-7636

Kenmore Heavy Duty 80 Series dryer. Looks and runs great. Slight heating problem \$15-You Haul \$30-I deliver 925-803-1191

Beautiful hand-carved oak dining room table. \$400 OBO. 925-245-0915

Super Single Waterbed, Bookcase headboard, excellent condition, needs heater. \$100 209-599-4644

King sz bedrm linen set. Waverly, hunter green and floral print. Set Incl comforter, bed skirt, 2 shams many more items. \$50 for all. 209-835-9082

Stovetop, GE 4 burner electric, almond, excellent condition \$75 925-462-7276

Walnut Entertainment Center bookcase with drop down desk. 61 inches wide x 75 inches high x 17 inches deep. Cabinet and adjustable shelves \$100.00 925-449-8034

White wash entertainment cabinet excellent condition \$50.00, White leather couch good condition, needs mild cleaning leather in great shape \$50.00 925-980-6190

Brand new sofa, blue denim, 6ft, \$350/OBO 925-337-0080

Oak bookcase headboard (twin) great cond. with frame and mattress. \$50 925-516-8339

Roll top desk, solid oak with locking top. Excellent cond. paid \$1200 sell for \$500 925-516-8339

Sofa with round arms and big matching chair, like new, black with beige swirl, elegant, exposed upholstery nails on the arms and front Both for \$599. 925-382-4478

CARDBOARD BOXES, sturdy, for moving/storage: 40 for \$50, 925-447-7070

New Price Pfister Shower/tub spout/faucet/valve. Solid Brass. Single handle control. model 808-80BP. \$80 or make offer 925-417-7593

## LOST & FOUND

Gold bracelet found outside Building 1325. Contact 925-422-7941. 209-835-6378

## MISCELLANEOUS

Closing Nursery Plant Sale-every Sat Sun through 7/31-1 gal \$1.95, 5 gal \$7.95, 15 gal shrubs \$24.95, 15 gal trees \$29.95-

## Newsline and classified ads

Current and past issues of *Newsline* are available from the *Newsline* archive on the Web. The latest edition of *Newsline* is usually posted on the Web the afternoon of the Friday it appears. To access the archive: <http://www.llnl.gov/llnl/06news/employee.html>

*Newsline* also is available in the publication alcove at the front of the new Livermore Public Library in the Civic Center. The latest editions are delivered to the library at the close of business Friday.

2670 Bixler Rd, Brentwood 925-240-6311

Multi-Family Garage Sale Saturday July 17, 8AM-3PM. Workbench, Tool stand, Luggage, Shelving, Exercise Equipment. 2447 Marbury Road, Livermore. 925-245-9648

Barbie Doll House, 3 stories, 5 feet high, with furniture accessory kit, hardly used, \$75. 209-835-7312

Hermes Engraving Machine, Print and equipment. \$1000 or Best Offer 925-292-0091

Spa Cover. 7ft4in square. 6 months old. Excellent shape. Brown vinyl. \$50 925-679-9925

Baby crib & matching changing table \$50 for both 209-892-1647

Small TV with UHF. Nice for cabin, bath-room. Only \$10. 510-537-7222

Doll House kit (all wood). Still in original box. Paid \$150 20 yrs ago. \$40. 209-835-6553

Sears Craftsman 10 inch table saw. Cast iron table, belt drive. \$250 925-455-8609

Six Plumbago plants 5 Gal, blue flowers, \$25 takes all. 925-447-6192

Sears Remote Garage Door openers 2 - Older model 15yrs+ programmable to your vintage chain driven opener. \$25 for both 925-449-2620

Oakland Raider Tickets - Lots of games available. Sold in pairs at face value (\$60). Great seats! Contact details. 925-371-0585

Southbend lath 4ftx9in, dies knurling heads, center bars/post, angling gauge, live centers, 3&4 chuck heads, mikes, cuttings&threading tools, much more 209-634-9984

49er tix (2) pre-season vs SD Chargers 9/8/04. Upper Box 33, Row D (great seats). \$64 each (face value). 925-447-6784

Platform Scale \$40, Compressor one cyl. Large tank \$65 925-735-6002

UNIVERSAL ORLANDO TIX - 5 Adult and 3 Child tix for Universal Studios or Islands of Adventure in Orlando. Just want what we paid, \$400.00. 925-454-8699

Sealy Serta Queen bed (few months old) \$350 925-337-0080

Saddle, Circle Y Cowboy Roper. High cantle, turned stirrups. Excellent cond. Retailers over \$2000, sell for \$800. 925-516-8339

## MOTORCYCLES

1993 - Honda Shadow VLX New rear tire, re-upholstered seat, all stock, 57K highway miles, Excl. condition. Best offer. 510-278-5842

Helmets; motorcycle full helmets with face shields and cloth bags; like new. \$40 each or best offer. 925-606-7556

## MUSIC INSTRUMENTS

1952 Gretsch New Yorker Acoustic guitar, Model # 6050, serial # 5591. 925-371-1154

Mid 90s? Charvel acoustic/electric. Plays great and sounds excellent. Asking \$350 obo. 925-371-1154

Full size violin with case and Wolf head-rest \$250 415-543-3643

Ibanez PT-5 guitar multiprocessor. Great condition. 925-525-4030

Early 90's Steinberger GR4 strat bodied headless electric guitar. Asking \$700 obo. 925-371-1154

Grand piano, 1984 Young Chang G-185 (6 ft. 1 in.), polished walnut w/matching bench. Excellent condition. One free tuning by my piano tuner. \$6,000. 925-447-4352

Tama drum hardware. Iron Cobra double bass pedal and hi hat stand. Pedals/\$225. Stand/\$125. Both are like new!!! 925-373-6255

Piano, Baldwin Acrosonic (spinet model), very good condition, 1975. Great small instrument. Walnut finish, includes bench. \$800 925-294-5664

Piano, English Upright, circa 1885, Burl'd Walnut cabinet, Ivory Keys. \$350.00 209-943-2166

## PETS & SUPPLIES

FREE CAT to loving home! 1 1/2 yr old friendly tabby male. Includes scratching post, food, bowls, etc. 925-463-1832

BEARDED DRAGON - Full-grown female approx. 16 inches long, friendly (can be held). \$150 925-413-1493

Cockateal bird free to good home comes with cage and stand. 925-447-9785

Beautiful b/g Macaw with extra large cage. \$1200 or bo. African Grey with lg. cage, \$900 or bo. 209-830-8285

Plastic DOG HOUSE for large dog, only used for 3 mos, \$30. Med. size METAL CARRY CAGE \$15. 209-836-4550

Horse Boarding @ Serendipity Stables in Byron, feed twice daily, large spacious pastures \$190 mth. Indoor stalls with large runs \$200 mth. 925-516-9606

Sun Conure with cage and accessories \$800. Call for pictures. Rabbits, several breeds for show or pets, prices vary. 925-706-2088

PET CARRIERS - Airline Style, 2 medium dog, or several cats, \$22 each 925-447-7070

## RECREATION EQUIPMENT

Gun cabinet, 2 locked front glass doors with drawers below. Cabinet is two separate pieces. \$175. 925-462-7831.

Golf equipment - clubs, bags, \$10-\$25 per item. Call me for the list. 925-485-1988

Tony Littles GAZELLE SUPRA, brand new, \$200.00, Ripon, CA, 209-599-3994

Callaway Titanium Fairway Woods - Great Big Bertha II 3 and 5 woods new \$399 ea - selling both for \$300 925-443-6603

Exercise, weight system, TuffStuff, bench, weights, more, nearly brand new paid 2,000 will sell for \$550 obo, you disassemble and haul. 209-836-2293

Sparring gear, one adult set, one child set, like new. \$25 each. 925-706-2088

## RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www.r.llnl.gov/tsmp>.

100 Mile Radius of LLNL - Johnson Controls offers its employees at LLNL a Guaranteed Ride Home program. To register call for more details. 925-960-0369, ext. 0-0361

Brentwood - leave Albertsons at 6:30 am-work hours 7:30 am to 4:15 pm 925-516-2687, ext. 3-8927

Stockton - Fourth driver/passenger needed for carpool from Stockton. 9-80 alternate work schedule 7:00-4:45. Contact ext. 3-5468

## SERVICES

Martinez Painting Service. Interior, Exterior, Pressure Washing, Baseboard Installation Acoustic Ceiling Removal Free Est. 925-784-1197 or 925-294-8383

Babysitter: MBA student looking for part time work babysitting. Experienced and friendly. Daytimes preferred. Contact 805-234-1359 or 925-606-0635

SAT and Writing Tutor. Do your kids want to improve their SAT or strengthen their writing? Affordable Sessions at \$15/hr. Also Flute and Piccolo Tutor. Experienced, Friendly, and Affordable! Has been playing for over a decade. Private Lessons -\$20/hr. 510-409-9240

SUPPORT GROUP for BETTER RELATIONSHIPS-personal/business! Codependents Anonymous (CoDA) Meets Tuesdays Noon T3520/R1174 Just come or call for Info 925-447-7070

## SHARED HOUSING

Livermore - Room for rent, 3 mi to LLNL, Lndry/Kitch Priv., Private bathroom, garage parking, DSL, \$550.00/mo+ \$250.00 dep+ 1/2 util: No smoking/pets. 925-373-1648

Dublin - Two rooms for rent in Dublin. One room with private bath \$750, one with private entrance \$625, includes utilities. 925-828-6117

## TRUCKS & TRAILERS

1986 El Dorado Motorhome. 29 ft class C, 46K miles. A/C, shower, microwave, refridg/freezer, storage, dinette, 46,000 miles. \$10,000. OBO. 925-456-3010

1988 - Ford F250 4x4, 7.3L diesel Turbo, new brakes, lift kit, many extras. Must see to appreciate. \$7,500/OBO 925-443-2173

2002 - Toyota Tundrs SR5 Access Cab. V8, 2WD, 22,400 miles, 1 owner, perfect condition. \$19,900. 925-463-1832

1988 - Chevy 1/2ton 4X4 Step Side 350; 6in Rise; Monster Tires; PB, PS, AC; Campershell & Carpet kit.Great Shape,\$8,000 OBO 925-447-3475

2003 - Chevy Silverado -SS, 4-door, V8 6L 345hp, AWD, exc cond, 22k mi, tow pkg, heated leather seats, Bose 6-CD stereo, tow pkg, all power, \$28,500 209-833-3785

1984 - Utility trailer, single axle, 5ft x10ft x3ft deep w/drop-down tail ramp for easy loading. \$700. 209-824-9464

1999 - Chevy Silverado Ext Cab 7in lift, flow masters, hyper tech chip, custom 3:56 gearing, awesome stereo system, new 35in tires. \$17,300.00 obo 209-825-9398

1988 - 1988 Majorca 25 Ft lavel trailer A/C Central heat front Kitchen sleeps 6 good condition. \$4200.00 925-443-5802

1987 - GMC Sieria Classic 2500 ton, \$3000, pwr; win/locks, cd player, new tires, runs good. 925-487-4422

1976 - Ford F350 Super Camper Special, 54K on rebuilt 460 V8, C6 A/T. 160K total miles. Extended bumper, great mechanical cond., one owner. \$3250/bo 925-447-1871

## VACATION RENTALS

Mountain cabin near Arnold. Lakes, streams, fishing, hiking. Peaceful, beautiful. 4 bedr, 2 bath. Sleeps 10-12. 925-245-1114

Sooo cute beach cottage in Santa Cruz. Near harbor. 2 bedr, 2 bath, spa, fully equipped kitchen. 3 blks. to ocean. 925-245-1114

Truckee House 3bd/2bth, sleeps 8, Tahoe-Donner Asso. pool, beach, golf, fish, rest and relax. Available now, this summer! \$130 per night. 925-373-2528

South Lake Tahoe - Bijou area, 1 mile from clubs, walk to beach, 3 Bed, all amenities. \$575 week, \$240 weekend, \$100 day, plus room tax. 209-239-6353

Maui, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. LLNL rates for year-round reservations. 925-449-0761

Mendocino Coast - - Ocean View - large 4bd/4.5ba home, hot tub, private courtyard, deck, 3Q/1F/bunks, pets ok w/ dep., 2 night min., discount for LLNL employees 925-455-5942

SOUTH LAKE TAHOE - 3 Bedroom 2 bath Chalet, nicely furnished, quiet area, all amenities, Park w/lake, tennis etc. Great for Vacation. RESERVE NOW! 209-599-4644

## WANTED

Looking for a 1997 T-bird. Fairly low miles. Will pay immediate cash. 510-537-7222

Looking for red bricks new or used. I could use about 500. Free or cheap. I will come and get them. 209-239-7870.

Due to space limitations, *Newsline* may withhold ads that have already run. They will still appear on the Web.

## POMBO

*Continued from page 1*

the country to improve water quality and quantity.

The bill, The Department of Energy National Laboratory Water Technology Research and Development Act of 2004, will involve the DOE national laboratories, including LLNL, in partnership with universities around the country to design and deploy technologies aimed at providing more clean water for residential, commercial, industrial and natural resource use around the country.

The bill authorizes \$225 million annually for basic and applied research and development in water supply technologies. Of this, \$200 million is for the research and development program, \$5 million is for administration and \$20 million is for facilities development.

"Water quality and technology are crucial, and we need to plan now in order to provide for future generations," Pombo said in introducing the bill. "We must look toward the future to improve water quality and our environment."

Senators Dianne Feinstein, Jeff Bingaman (New Mexico), Richard Durbin (Illinois) and Larry Craig (Indiana) are co-sponsoring the Senate bill, while California Rep. Ken Calvert is a House co-sponsor.

"We have neglected federal water research for too long," Domenici said. "Now, we are faced with regional droughts and pending water shortages of one type or another in most regions of the country. Our investment in water research has been like a leaky faucet. A drip and occasional dribble. With shortages on the horizon, let's put more money and brain power into developing water technologies that will augment our supply of clean water."



From left: Liz Burton and Robin Newmark of the Lab, Rep. Richard Pombo and Lab Executive Officer Ron Cochran attended the Wednesday press conference to announce Pombo's water technology bill. Sen. Pete Domenici of New Mexico announced a similar bill for the Senate.

As outlined in the bill, the Laboratory is one of eight nationally that will partner with universities to form regional centers — each with its own research and development theme. Partnerships with other federal agencies and nongovernmental organizations will be fostered by competitive matching grant programs. Sandia National Laboratory in Albuquerque would serve as the national center, with LLNL serving as the Pacific regional center.

"The Lab has a long, solid record of work that greatly affects California water, and water throughout the nation," Pombo said. "Their great minds and computers have been working on improving water quality and technology. This bill is important for California, the region and the nation."

"There is no doubt that increasing population and development, drought, and contamination will continue to strain our water supplies in the coming decades," Feinstein added. "That is why we need to provide the leadership now to find solutions to our water challenges, particularly on the emerging contamination crisis of the rocket fuel chemical perchlorate in our water and food supplies."

Robin Newmark, the Lab's program leader in water and environment research, said the bill represents a great opportunity for LLNL's water research. "This is a very important program for our nation and we're very excited to be working on this," Newmark said. Newmark and Liz Burton, both of the Energy and Environment Directorate, attended Wednesday's press conference and participated in an open house, in which they showed off some of the technology's that could be a part of the program

"Water is a societal need and a challenging intellectual problem," Newmark said. "Our staff is very excited to be working on this."

Some of the work the Lab could be doing includes programs to provide new water for California's Imperial Valley, improving nitrate and perchlorate removal and understanding agricultural impact on groundwater, among other technologies.

"There are multiple demands on our water supply in California — from drinking water to growing the safest most abundant food supply in the world," Pombo said. "These are important to our way of life in California, and all compete for our water supply. We must take this time to invest in our future to ensure we can meet these demands."

## MESSENGER

*Continued from page 1*

terrestrial planets. After a scheduled 2:16 a.m. EDT liftoff aboard a Delta II launch vehicle on Aug. 2, the first day of a 13-day launch period, MESSENGER's voyage includes three flybys of Mercury in 2008 and 2009 and a yearlong orbit of the planet starting in March 2011.

Livermore's role was critical in ensuring that the spacecraft's gamma-ray spectrometer could withstand the heat of the galaxy's closest planet to the sun. Livermore's Norm Madden and Monika Witte led a team that built a rugged, encapsulated germanium gamma-ray detector and mated it with a miniature cryocooler. The miniature cryocooler and a multi-layered thermal shield maintain the germanium detector at a temperature less than 90 degrees Kelvin, ensuring that the gamma-ray spectrometer operates correctly.

The Livermore team, which also worked with Lawrence Berkeley National Lab, consists of Doug Berger, Sue Bishop, Morgan Burks, Jerry Caulfield, Christopher Cork, Steve DeTeresa, Del Eckels, Mark Eli, Ross Eyre, Lorenzo Fabris, Mike Gerhard, Roger Gregory, Lisle Hagler, Wilthea Hibbard, Ethan Hull, Wayne Jensen, Mike Kennedy, Satish Kulkarni, Christopher Lee, Madden, Pete Meyer, Wayne Miller, Mitch Moffett, Jerry Moore, Marty Roeben, Bob Sanchez, Gordon Spellman, Carl Westrich and Witte.

The Laboratory also is working with The Johns Hopkins University Applied Physics

Laboratory, which serves as the overseeing institution on the Mercury MESSENGER project.

Using the Livermore-built gamma ray-detector, MESSENGER will be able to trace gamma-ray emissions from the Mercurian crust as well as solar winds and cosmic rays as it orbits around the planet.

"This was truly a team effort," Witte said. "Everyone helped everyone else out."

Based on technology originally developed for Cryo 3, a mobile, handheld mechanically cooled germanium radiation detector that can detect gamma rays from radioactive material, the detector on board MESSENGER also is cooled mechanically by a low-power, compact micro cryocooler, eliminating the need for liquid nitrogen, yet attaining the same high-level energy resolution.

"This is a direct spin off of Cyro 3," Madden said. "Now we're using similar technology in a geoscience and space science role."

Mercury's proximity to the sun makes it an unprecedented mission design challenge. The sun, viewed from the surface of Mercury, can appear up to 11 times brighter than what is seen on Earth, and Mercury's surface temperatures at its equator can reach 450 degrees Celsius (about 840 degrees Fahrenheit). However, MESSENGER will operate at room temperature behind a sunshade of heat-resistant ceramic fabric. The 1.2-ton spacecraft also features a heat-radiation system and will pass only briefly over Mercury's hottest regions, limiting exposure to the intense heat reflected back from the broiling surface.

"We have to maintain the heat at no higher than 90 degrees Kelvin (-297.67 degrees

Fahrenheit)," Madden said. "The team has a good reputation for making this type of instrument and was glad to have this unique opportunity to put this superior detector on the MESSENGER spacecraft."

MESSENGER (short for MErcury Surface, Space ENvironment, GEochemistry, and Ranging) is only the second spacecraft to set sights on Mercury. Mariner 10 flew past it three times in 1974 and 1975 and gathered detailed data on less than half the surface. Carrying seven scientific instruments on its compact and durable composite frame, MESSENGER will provide the first images of the entire planet. The mission will also collect detailed information on the composition and structure of Mercury's crust, its geologic history, the nature of its thin atmosphere and active magnetosphere, and the makeup of its core and polar materials.

On a 4.9-billion mile (7.9-billion kilometer) journey that includes 15 loops around the sun, the solar-powered MESSENGER will fly past Earth once, Venus twice and Mercury three times before orbiting around its target planet. The Earth flyby, a year after launch, and the Venus flybys, in October 2006 and June 2007, use the pull of the planets' gravity to guide MESSENGER toward Mercury's orbit. The Mercury flybys in January 2008, October 2008 and September 2009 fine-tune and slow MESSENGER's track while allowing the spacecraft to gather data critical to planning the mission's orbit phase.

For more information on MESSENGER, images and animation, go to <http://messenger.jhuapl.edu>.

# There's more in the message of those 'bounced' e-mails

By Jeanie Larson  
CYBER SECURITY PROGRAM

Several Laboratory employees have reported receiving "bounced" e-mail messages. A bounced e-mail message is one that was undeliverable by the e-mail server and is returned (bounced) back to the sender (as indicated in the "from" field of the message). Just because you receive a bounced e-mail message does not mean that you sent the message. It could mean that your e-mail address was used (forged) by someone else in the from field of the e-mail message.



These fraudulent bounced e-mail messages usually occur because either:

- There is a virus-infected computer somewhere that contains your e-mail address (your computer or someone else's computer that has your e-mail address), or
- A spammer or malicious attacker has forged the from field with your e-mail address.

Fraudulent bounced e-mail messages generally fall into two categories. The first type is generated by an e-mail server as a result of a forged "from" in the e-mail message header (a message you did not actually send). This is a common technique used by spammers to hide the source of the

spam. Almost every spam message has a forged return address. If you are a victim of this type of spam, it is recommended you delete the message.

The second, more serious type of bounced e-mail message is one that originates from a virus or worm that appears to be legitimate. There is usually an attached file with the body of the message instructing you to open the attachment. If there is an attachment, don't open it. Delete it.

Some things you can do if you receive a bounced e-mail message:

- Never open an e-mail attachment in a bounced e-mail message.
- Never click on a URL link in a bounced e-mail message.
- Never respond to a spam or a bounced e-mail message. You will only confirm that your e-mail address is valid and will continue to remain on the spammer's list.

## Example 1: Sample of bounced e-mail

```
Received: from 165.165.96.12 by
lw10fd.law10.hotmail.msn.com with
HTTP;
Thu, 19 Feb 2004 11:30:52 GMT
X-Originating-IP: [165.165.96.12]
X-Originating-Email:
[bogus_user@hotmail.com]
X-Sender: bogus_user@hotmail.com
From: "JOHN DOE" <bogus_user@hotmail.com>
To: bogus_user@hotmail.com
Subject: [Suspected SPAM] BE MY
PARTNER LET'S WORK TOGETHER
Date: Thu, 19 Feb 2004 04:30:52 -
0700
Mime-Version: 1.0
Content-Type: text/plain;
format=flowed
Message-ID: <LAW10-F1165xeXF-
sAsU000934ee@hotmail.com>
X-OriginalArrivalTime: 19 Feb 2004
11:30:52.0787 (UTC)
FILETIME=[D4F91430:01C3F6DB]
X-Brightmail-Tracker: AAAACwDDis-
QAw4v7AMOMHgDDjCAAw4rBAMOK2QDDi-
wAAw4sDAMOLXgDD
jEUAw4xG
X-Scanned-By: MIMEDefang 2.39
Sender: owner-palm-
users@lists.llnl.gov
Precedence: bulk
Reply-To: palm-users@llnl.gov
```

A forged e-mail (e-mail header) with an LLNL address in the BCC field (not visible). The LLNL address appears to be palm-users@lists.llnl.gov, in which case a bounced e-mail went to the list owner owner-palm-users@lists.llnl.gov. This is a convenient way for spammers to send their spam to addresses and bypass spam blocking. It can also be used to send malicious URLs in the text of the message or in attachments. E-mail message headers can be viewed in Eudora by clicking on the "blahblahblah button" in the menu bar.

Keep anti-virus signatures updated at least daily and real-time virus detection enabled. Check with your desktop support person to make sure your anti-virus signatures are up to date and that real-time virus detection is enabled.

## Example 2: Sample of a bounced e-mail containing malicious URL

```
Date: Wed, 12 May 2004 16:39:26 -0400 (EDT)
From: MAILER-DAEMON@serverc.qn.net (Mail Delivery
System)
Subject: Undelivered Mail Returned to Sender
To: dag@llnl.gov
MIME-Version: 1.0
Content-Type: multipart/report; report-type=delivery-
status;
boundary="492DD34C1D.1084394366/
charlie.qn.net"
Content-Transfer-Encoding: 8bit
Message-Id: <20040512203926.2252735DAF@charlie.
qn.net>
X-Scanned-By: MIMEDefang 2.39
Sender: owner-dag-members@lists.llnl.gov
Precedence: bulk
```

This is the Postfix program at host charlie.qn.net. I'm sorry to have to inform you that the message returned below could not be delivered to one or more

```
destinations.
For further assistance, please send mail to <postmas-
ter>
If you do so, please include this problem report. You
can delete your own text from the message returned
below.
The Postfix program
<bogus-user@qn.net>:host mail.qn.net[206.21.174.16]
said: 550 <bogus-user@qn.net>: User unknown in local
recipient table (in reply to RCPT TO command) Report-
ing-MTA: dns; charlie.qn.net
Arrival-Date: Wed, 12 May 2004 16:39:20 -0400 (EDT)
Final-Recipient: rfc822; bogus@qn.net
Action: failed
Status: 5.0.0
Diagnostic-Code: X-Postfix; host mail.qn.net
[206.21.174.16] said: 550
<bogus@qn.net>: User unknown in local recipient
table (in reply to RCPT TO command)
Received: from aar.alcatel-alsthom.fr (h000c41
```

```
2519f8.ne.client2.attbi.com [24.61.157.226])
by charlie.qn.net (Postfix) with SMTP id 749802AF2D
for <bogus@qn.net>; Wed, 12 May 2004 16:39:20 -0400
(EDT)
Date: Wed, 12 May 2004 22:41:05 +0000
From: dag@llnl.gov (forged FROM)
Subject: Authentic porn Movies!! shocking
To: Bogus <bogus@qn.net> (non-existent user)
References: <JGF52E874HFKI367@qn.net>
In-Reply-To: <JGF52E874HFKI367@qn.net>
Message-ID: <640H16K5K1KAI19E@llnl.gov>
MIME-Version: 1.0
Content-Type: text/html; charset=Windows-1251
Content-Transfer-Encoding: 8bit
X-charlie-MailScanner-Information: Please contact the
ISP for more information
X-charlie-MailScanner: Found to be clean
please wait loading
Impossible... I think you should know about it...
no thanks
```

The email message above was sent to a non-existent user (bogus-user@qn.net) with a forged from field (dag@llnl.gov). The message bounced back to the list (dag@lists.llnl.gov). The URL links in the message redirect the user to a malicious Website (containing malicious code).

## High honor



Left to right: Laboratory Director Michael Anastasio, Associated Deputy Director for Strategic Security Billy Mullins, DTED's Associate Program Leader for Weaponization Larry Altbaum, Associate Director for Defense and Nuclear Technology Bruce Goodwin, the National Security Office's Assistant Director for Military Affairs George Sakaldasis, U.S. Air Force Major General Robert Smolen. On Friday, June 25, Smolen honored Goodwin, Sakaldasis and Altbaum with a prestigious Air Force award, the Exemplary Civilian Services medal. This medal is the highest of three Air Force civilian service awards, and is equivalent to the military's Distinguished Service Medal.



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